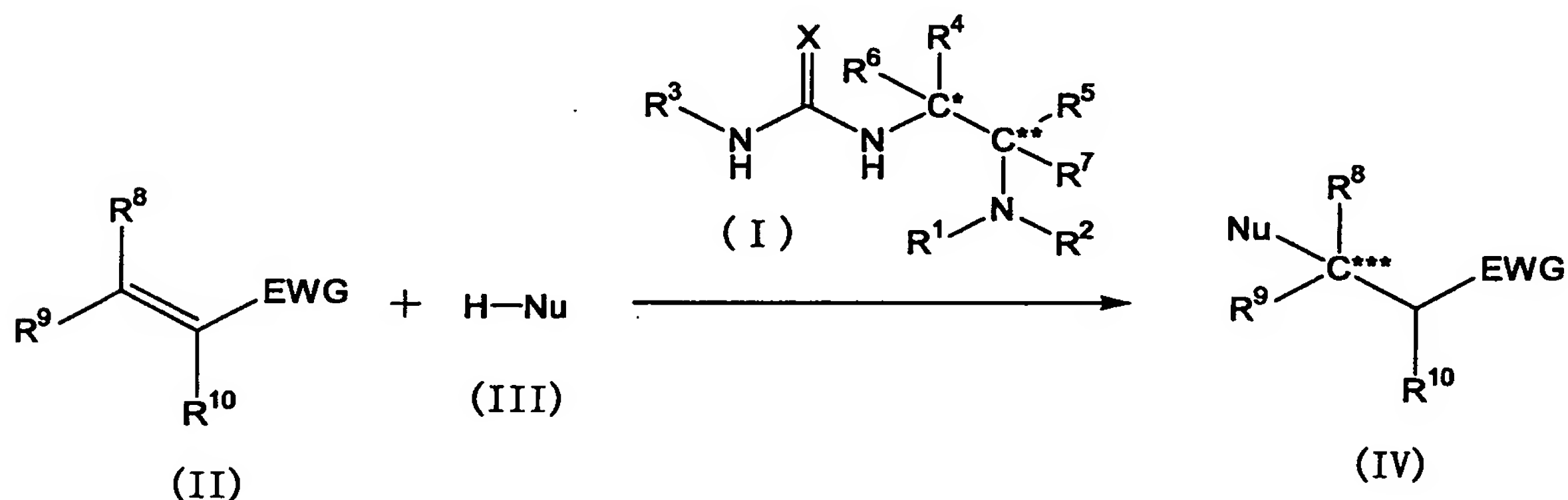


Abstract

The present invention relates to a production method of asymmetric compound (IV) which includes conjugately adding nucleophilic reagent (III) to compound (II) in the presence of asymmetric urea compound (I). The present invention provides a non-metallic asymmetric catalyst capable of realizing a highly stereoselective asymmetric conjugate addition reaction in a high yield, and an advantageous production method of an asymmetric compound by an asymmetric conjugate addition reaction using the asymmetric catalyst.



wherein X is an oxygen atom or a sulfur atom; C^{*}, C^{**} and C^{***} are asymmetric carbons; R¹, R², R⁴, R⁵, R⁸, R⁹ and R¹⁰ are each a lower alkyl group optionally having substituent(s) and the like, or R⁴ and R⁵ and the like in combination optionally form a homocyclic ring optionally having substituent(s) and the like; R³ is an aryl group optionally having substituent(s) and the like; R⁶ and R⁷ are each a hydrogen atom and the like; Nu is -CR¹⁶(COR¹⁷)(COR¹⁸) wherein R¹⁶, R¹⁷ and R¹⁸ are each a lower alkyl group optionally having substituent(s) and the like, and the like; and EWG is an electron withdrawing group.